

REMARKS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

Claims 3, 23, 34, 46, 55 are requested to be cancelled.

Claims 7-8, 13 were previously requested to be cancelled.

Claims 1-2, 4, 6, 9-12, 14-16, 19-20, 22, 24-28, 32-33, 35-39, 42-43, 45, 47, 51, 53-54, 56, 59-60 are currently being amended.

This amendment changes and deletes claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claims remain under examination in the application, is presented, with an appropriate defined status identifier.

After amending the claims as set forth above, claims 1-2, 4-6, 9-12, 14-22, 24-33, 35-45, 47-54, and 56-63 are now pending in this application.

Applicant appreciates the Examiner's indication of allowability of claims 4, 9, 11, 23-31, 35 and 46-52 over the prior art.

Claims 1-6, 9-12, 14-18, 19/1, 19/2, 20/1, 20/2, 21-41, 42/32, 42/33, 43/32, 43/33 and 44-63 stand rejected under 35 U.S.C. §112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Examiner raised various antecedent basis issues with regard to these claims. Applicant has therefore amended these claims, largely in accordance with the Examiner's suggestions. Applicant has also removed multiple dependencies from a number of the claims without prejudice.

Claims 54-63 stand rejected under 35 U.S.C. §101 as being directed to non-statutory subject matter. In particular, the Examiner asserted that claim 54 recites a signal per se and does not fall within the statutory classes set forth in 35 U.S.C. §101. Claims 55-63 have been rejected due to their dependency upon claim 54. In response to this rejection, Applicant has amended claim 54 to more positively recite the use of a video decoder. In particular, claim 54

has been amended to describe how a video decoder uses a further picture of the sequence as an alternative reference picture for the current picture or a part of the current picture when the video decoder is unable to decode the default reference picture. Because claim 54 and its dependent claims now positively describe the use of the signal by a video decoder, Applicant submits that this rejection is overcome.

Claims 1, 3, 10, 14, 16, 20/1, 22, 32, 34, 39, 43/32, 45, 53-55, and 60 stand rejected under 35 U.S.C. §102(e) as being anticipated by Normile (6,438,165). Claims 19/1 and 42/32 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Normile. Claims 2,17, 18, 19/2, 20/2, 33, 40, 41, 42/33, 43/33, 61, and 62 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Normile in view of Yagasaki (5,515,388). Claims 5, 15, 36, 37, 57, and 58 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Normile in view of Sun (5,455,629). Claims 6, 38, and 59 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Normile in view of the document entitled "ITU-Telecommunications Standardization Sector (Proposed Draft of modified Annex L including Copyright, normative Error Concealment, and Exact IDCT Signaling. Claims 12, 21, 44, and 63 stand rejected under 35 U.S. C. §103(a) as being unpatentable over Normile in view of Yamaguchi (US 2002/0009141 A1).

Notwithstanding the Examiner's assertions, Applicant respectfully traverses the Examiner's rejections. In particular, and for the reasons discussed below, Applicant submits that the Normile reference neither teaches nor suggests the use of two or more reference pictures for a particular current picture.

The present invention, as described in the independent claims, specifically relates to the use of an alternative reference picture for the current picture, or for part of the current picture, which is to be used when the video decoder is unable to decode a default reference picture. For example, independent claim 14 describes an indicator which identifies a further picture of the sequence that is to be used by a video decoder as an alternative reference picture for the current picture or said part of the current picture when the video decoder is unable to decode the default reference picture. Similar features are described in the other independent claims. Due to reasons such as loss or corruption (page 20, lines 7-9), there are

circumstances under which the default reference picture cannot be decoded. Accordingly, the present claimed invention provides two or more reference pictures for a particular current picture: a default picture and at least one alternative picture. Each alternative picture is made available for use in the decoding process for the current picture when the default picture cannot be used.

Applicant respectfully submits that the Normile reference provides no such teachings. Instead, the teachings of the Normile reference specifically relate to the provision of a single reference frame (picture), which is to be used in decoding a particular current frame. With regard to this feature, the Examiner is respectfully directed to column 6 lines 42-45 and column 8 line 14-19 of the Normile reference. These selections clearly describe how the teachings of Normile relate to the “choosing” in the encoder between two possible reference pictures--a composite “reference frame” as discussed in column 6 lines 25-41 and a “previous frame”--for a current picture, and encoding a current frame using the selected reference frame. Thus, in the decoding process, only the chosen single reference picture can be used by the decoder. Unlike the currently pending claims, there is no disclosure or suggestion in the Normile reference to use an alternative reference picture if the chosen single reference picture cannot be decoded at the decoder. Thus, when the single chosen reference picture cannot be decoded, there is no alternative indicated reference picture in the Normile reference that can be used in place of the nondecodable single chosen reference picture. In this situation, the system of the Normile reference would simply fail to decode the current picture. In contrast, the system and method described in the pending claims provides an error resilience mechanism that allows the decoding to continue.

Reviewing the Normile reference in greater detail, two embodiments are discussed. In a first embodiment, discussed in part at column 6 lines 42-51, a particular block in a current frame is encoded using the (composite) reference frame to provide a corresponding first encoded block represented by a first number of bits. The particular block is also encoded using the previous encoded frame as a reference frame to provide a corresponding second encoded block represented by a second number of bits. The number of bits of these two encoded blocks are compared, and the encoded block with the “least number of bits” (column 6 line 45) is used for transmission to the decoder. Thus, this embodiment of the Normile

reference provides no alternative reference frame indicated for use by the decoder, should the decoder be unable to decode the chosen reference frame. Instead, a choice is made to use one particular reference picture which is the reference frame that must be used to decode the current frame correctly. Should the decoder be unable to decode the chosen reference frame, the decoding process for the current frame will also fail.

Unlike the first embodiment, the second embodiment of the Normile reference involves comparing the current frame with the previous frame and the (composite) reference frame to determine which one of the previous encoded frame and the (composite) reference frame is the most similar to the current frame. The frame most similar to the current frame is then used as a basis to encode the current frame. Like the first embodiment, however, there is no disclosure in the second embodiment of using an alternative reference picture. Instead, a choice is made to use one particular reference picture, which is the reference frame that must be used to decode the current frame correctly. As in the first embodiment, should the decoder be unable to decode the chosen reference frame, the decoding process for the current frame will also fail. The currently pending claims, on the other hand, address this deficiency by including an alternative reference picture for the current picture, or for part of the current picture, which is to be used when the video decoder is unable to decode a default reference picture. The Normile reference contains no such feature.

Because the Normile reference neither teaches nor suggests the use of an alternative reference picture for the current picture, or for part of the current picture, which is to be used when the video decoder is unable to decode a default reference picture, Applicant submits that the Examiner's rejection of claims 1, 3, 10, 14, 16, 20/1, 22, 32, 34, 39, 43/32, 45, 53-55, and 60 stand rejected under 35 U.S.C. §102(e) based upon the Normile reference is overcome. Additionally, because all of the Examiner's rejections under 35 U.S.C. §103(a) rely upon the Normile reference as the primary reference, Applicant submits that each of the other claims is patentable over the cited prior art due to the lack of this feature in the Normile reference.


Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 06-1450. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 06-1450. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 06-1450.

Respectfully submitted,

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